BRUHAT BANGALORE MAHANAGARA PALIKE

Name of Work: Construction of RO plant at Kodigehalli ward No.08

Job Code:- 008-19-000023

Est Cost= 15.00 Lakhs

Sl No	Description of item	Unit	No	Length	Bredth	Depth	Qty	Rate	Amount
	RO Plant Room								
1	KSRB 2-2.2 : Earth work excavation for foundation of buildings, culverts water supply, sanitary line and electrical conduits either in pits or in trenches 1.5m and above in width, in Hard soil not exceeding 1.5m, in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50m, after breaking of clods complete as per specifications, specification, No, KBS 2.1(a) / 2.3.5, Page No. 5 / Item No. 2.3/ PWD SR 2018-19								
	Long Wall	Cum	2	4.90	0.90	1.10	9.70		
	Short Wall		2	2.10	0.90	1.10	4.16		
	Columns		4	1.50	1.50	1.20	10.80		
							24.66	**322.92**	**7,963.00**
							Basic Rate	299.00	
							Area Weightage @ 8%	23.92	
							Total	322.92	
2	KSRB 4-1.3 : Providing and laying in position plain cement concrete of mix 1:4:8 with OPC cement @ 180 kgs with 40mm and down size graded granite metal coarse aggregates @ 0.85cum and fine aggregares @ 0.57 cum machine mixed, concrete laid in layers not, exceeding 15cms, thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1,4.2. No. 12/ Item No. 4.3/ PWD SR 2018-19								
	Long Wall	Cum	2	4.90	0.90	0.15	1.32		
	Short Wall		2	2.10	0.90	0.15	0.57		
	Steps		1	3.00	0.90	0.15	0.45		
	Column		4	1.50	1.50	0.15	1.35		
	For Flooring		1	3.54	2.54	0.20	1.80		
							5.49	**5510.16**	**30,242.00**
							Basic Rate	5102.00	
							Area Weightage @ 8%	408.16	
							Total	5510.16	
3	KSRB 5.2.3 : Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar 1:6, stone hammerd dressed in courses not less than 20 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications.KBS 5.1.13 Page No. 23 / Item No. 5.6 / PWD SR 2018-19								
	Long Wall	Cum	2	4.75	0.75	0.45	3.21		
	Short Wall		2	2.25	0.75	0.45	1.52		
	Deduction for Columns		-4	1.50	0.75	0.45	-2.03		
							2.70	**4963.68**	**13,402.00**
							Basic Rate	4596.00	
							Area Weightage @ 8%	367.68	
							Total	4963.68	
4	KSRB 5.3-3 : Providing and constructing granite / trap / basalt size stone masonry in basement with cement mortar 1:6, edges of stones chistle dressed in courses not less than 15 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications.KBS 5-1.13 Page No. 23 / Item No. 5.9 / PWD SR 2018-19								
	Long Wall	Cum	2	4.75	0.45	0.45	1.92		
	Short Wall		2	2.25	0.45	0.45	0.91		
	Deduction for Columns		-4	1.50	0.45	0.45	-1.22		
							1.62	**5921.64**	**9,593.00**
							Basic Rate	5483.00	
							Area Weightage @ 8%	438.64	
							Total	5921.64	
5	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.115, I.No. 15.1 of PWD SR 2018-19)								
	Long Wall	Sqm	2	4.75		0.9	8.55		
	Short Wall		2	2.25		0.9	4.05		

							12.60	**152.28**	**1,918.73**
							Basic Rate	141.00	
						Area Weightage @ 8%		11.28	
							Total	152.28	
6	KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregtes @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, ncluding cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2018-19)								
	Long Wall	Cum	2	4.75	0.45	0.10	0.43		
	Short Wall		2	2.25	0.45	0.10	0.20		
	Deduction for Columns		-4	1.50	0.45	0.10	-0.27		
							0.36	**5855.76**	**2,108.00**
							Basic Rate	5422.00	
						Area Weightage @ 8%		433.76	
							Total	5855.76	
7	KSRB 2.3 : Filling available excavated earth (excluding rock) in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour complete as per specifications. Specification No. KBS 2.9 (P.6/I.2.10) PWD SR 2018-19								
	Qty Vide Item No. 30	Cum					24.66		
	Deductions								
	PCC		-1	5.49			-5.49		
	SSM		-1	2.70			-2.70		
							16.47	**217.08**	**3,576.00**
							Basic Rate	201.00	
						Area Weightage @ 8%		16.08	
							Total	217.08	
8	KSRB 5-11 : Providing and constructing load bearing wall with solid concrete blocks of size 400x200x200 mm having block density not lessthan 1800 kg/m3 and having a minimum average compressive strength 5.00 N/mm2 confirming to IS 2185 (Part) : 2005 and constructed with CM 1:4 , as per IS 2572:2005 including cost of all materials, labour charegs, scaffolding, curing complete as per specifications. KBS No.5.4. Page No. 25 / Item No. 5.27.1 / PWD SR 2018-19								
	Wall Portion	Sqm							
	Long Wall		2	4.00		3.00	24.00		
	Short Wall		2	2.54		3.00	15.24		
	Parapet Wall								
	Long Wall		2	4.00		0.60	4.80		
	Short Wall		2	2.54		0.60	3.05		
	Steps		1	3.00		0.90	2.70		
			1	3.00		0.60	1.80		
			1	3.00		0.30	0.90		
	Deductions RS		-1	3.00		2.50	-7.50		
	V		-2	0.90		0.60	-1.08		
							43.91	**984.96**	**43,248.00**
							Basic Rate	912.00	
						Area Weightage @ 8%		72.96	
							Total	984.96	
9	KSRB 4.2.2 : Providing and laying in position reinforced cement concrete of design mix M20 with OPC cement @ 320 kgs, with 20mm and down size graded granite metal, coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum with superplastisiser @ 3lts confirming to IS 9103-1999 reaffirmed-2008 machine mixed, concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation plinth and ground floor level for roof slabs, staircase, lintels, retaining walls, walls (any thickness) including attached plasters, column, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window cills, fillets etc, including cost of all materials, labour, HOM of machinery, curing, complete as per specifications. Specification No. KBS 4.1,4.6, No. 13/ Item No. 4.11/ PWD SR 2018-19								
	Column Footing	Cum	4	1.30	1.30	0.60	4.06		
			4	0.23	0.23	3.20	0.68		
	Plinth Beam		1	14.00	0.20	0.20	0.56		
	Lintels		1	14.00	0.20	0.15	0.42		

	Roof beam		1	14.00	0.20	0.20	0.56		
	Roof Slab		1	4.00	3.30	0.15	1.98		
							8.25	**6111.72**	**50,441.00**
							Basic Rate	5659.00	
						Area Weightage @ 8%		452.72	
							Total	6111.72	
10	KSRB 4.2.10 : Providing and laying in position reinforced cement concrete ofmix M20 with OPC cement @ 24kgs, with 12 mm and down size graded granite metal coarse aggregates @ 0.5175 cum and fine aggregates @ 0.345 cum with superplastisiser @ 0.225lts,machine mixed, well compacted for plain chajja of 7.5 cms. average thickness, upto ground floor lever, including cost of all materials, labour, HOM of machinery, curing, complete as per specification. Specification NO. KBS 4.1, 4.6 Page No. 14 / Item No. 4.19 / PWD SR 2018-19								
	V	Sqm	2	0.90	0.40		0.72		
							0.72	**475.20**	**342.00**
							Basic Rate	440.00	
						Area Weightage @ 8%		35.20	
							Total	475.20	
11	KSRB 4.9.1: Providing TMT steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost pf materials, labour, HOM of machinery complete as per specifications.Specification No. KBS 4.6.3 Page No. 18 / Item No. 4.46.2 / PWD SR 2018-19 - FE 500								
	For Roof, Columns Beams @ 120 Kg / Cum	1	120.00	8.25			990.37		
	Chajjas @ 10 Kg / Cum	1	10.000	0.72			7.20		
							997.57		
						tonne	**1.00**	**76643.28**	**76,457.00**
							Basic Rate	70966.00	
						Area Weightage @ 8%		5677.28	
							Total	76643.28	
12	KSRB 4-6.4 : Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for vertical surface such as walls at any thickness, including attached pilasters, buttresses, plinth and string courses cost of all materials, labour complete as per specifications. Specification NO KBS 4.6.2 Page No. 15 / Item No. 4.31/ PWD SR 2018-19								
	Columns Footing	Sqm	4	5.20		0.60	12.48		
			4	0.92		4.00	14.72		
	Plinth		2	14.00		0.20	5.60		
	Lintels		2	14.00		0.15	4.20		
	Roof beam		2	14.00		0.20	5.60		
	Roof		1	4.00	3.30		13.20		
	Sides		2	4.00		0.15	1.20		
			2	3.00		0.15	0.90		
							57.90	**386.64**	**22,386.00**
							Basic Rate	358.00	
						Area Weightage @ 8%		28.64	
							Total	386.64	
13	KSRB 4-6.10 : Providing and removing centering, shuttering, strutting, propping etc., for chajjas, corbels etc., including edges including cost of all materials, labour complete as per specifications. Specification NO KBS 4.6.2 Page No. 16 / Item No. 4.37 / PWD SR 2018-19								
	V	Sqm	2	0.90	0.60		1.08		
							1.08	**348.84**	**377.00**
							Basic Rate	323.00	
						Area Weightage @ 8%		25.84	
							Total	348.84	

14	KSRB 15.3.13 : Providing 12mm thick cement plaster in single coat with cement mortar 1:3, to ceiling including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. Page No. 114 / Item No. 15.21 / PWD SR -2018-19								
	Ceiling Plastering	Sqm	1	3.54	2.54		8.99		
							8.99	**253.80**	**2,282.00**
							Basic Rate	235.00	
						Area Weightage @ 8%		18.80	
							Total	253.80	
15	KSRB 15.3.11 :Providing 20mm thick cement plaster in single coat with cement mortar 1:4, to stone masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications. Page No. 114 / Item No. 15.19 / PWD SR 2018-19 (Inside wall)								
	Inside wall	Sqm	2	3.54		3.00	21.24		
		Sqm	2	2.54		3.00	15.24		
	Deductions - For rolling shutter	Sqm	-1	3.00		2.50	-7.50		
	ventilators	Sqm	-2	0.90		0.60	-1.08		
							27.90	**292.68**	**8,166.00**
							Basic Rate	271.00	
						Area Weightage @ 8%		21.68	
							Total	292.68	
16	KSRB 15-7 : Providing lime rendering for plastering to wall and ceiling, including cost of materials, labour, curing complete as per specifications. (P. 115 / I. 15.33 PWD SR - 2018-19).								
	Qty Vide Item No. 41+42	Sqm					**36.89**	**34.56**	**1,275.00**
							Basic Rate	32.00	
						Area Weightage @ 8%		2.56	
							Total	34.56	
17	KSRB 15.3.9: Providing 18mm thick cement plaster in single coat with cement mortar 1:6, to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications Page No. 114 / Item No. 15.17 / PWD SR 2018-19 (Out side Wall)								
	Out Side	Sqm	2	4.00		3.00	24.00		
			2	3.00		3.00	18.00		
	Parapet Wall		4	4.00		0.60	9.60		
			4	3.00		0.60	7.20		
	Steps		3	3.00		0.20	1.80		
			3	3.00		0.30	2.70		
	deduction for RS		-1	3.00		2.50	-7.50		
	V		-2	0.90		0.60	-1.08		
							54.72	**264.60**	**14,479.00**
							Basic Rate	245.00	
						Area Weightage @ 8%		19.60	
							Total	264.60	
18	KSRB 15-14.1 : Providing and applying two coats with oil bound washable distemper of approved brand and shade on wall surface including priming coat with distemper primer after thoroughly brooming the surface free from mortar drops and other foregin matter including preparing the surface even and sand paper smooth, cost of materials, labours, complete as per specifications PWD SR 2018-19 (P.117 /Item No 15.49.1)								
	Qty Vide Item No.42+43	Sqm					64.79		
							64.79	**118.80**	**7,697.00**
							Basic Rate	110.00	
						Area Weightage @ 8%		8.80	
							Total	118.80	
19	KSRB 15-16.1: providing and finishing external walls in two coats with water proof cement paint of approve brand and shade to give an even shade after thourghly brooming the surface to remove all dirt and losse powdered material, free from mortar dops and other foreign matter cost of materials, labours, complete as per specifications PWD SR 2018-19 (P. 118 / I. 15.53.2) with Primer								
	Qty Vide Item No.44	Sqm					54.72		
							54.72	**110.16**	**6,028.00**

							Basic Rate	102.00	
						Area Weightage @ 8%		8.16	
							Total	110.16	
20	KSRB 15-18.2 : Providing and applying enamel metal paint two coats (excluding priming coat) over new steel or other metal surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter, including cost of materials, labour, complete as per specifications. Page No. 121 / Item No. 15.74 / PWD SR 2018-19								
	Out Side	2	1	3.00		2.50	15.00		
		1	2	0.90		0.60	1.08		
						Sqm	**16.08**	**102.60**	**1,650.00**
							Basic Rate	95.00	
						Area Weightage @ 8%		7.60	
							Total	102.60	
21	Providing and fixing Special make glazed Vitrified tiles (Granomite finis) of approved make, quality and colour of sized 6000x600x10mm thick fixed on existing flooring wit ha special roffe adhesive for flooring and skirting etc., complete including providing spears at required interval and removing stains etc., complete. Page No. 107 / Item No. 14.43 / PWD SR 2018-19								
	Flooring	1	1	3.54	2.54		8.99		
						Sqm	**8.99**	**1186.92**	**10,670.00**
							Basic Rate	1099.00	
						Area Weightage @ 8%		87.92	
							Total	1186.92	
22	KSRB 14-17.2 : Providing skirting, dado, rises of steps with colour glazed tiles on 10mm thick cement plaster 1:3 and jointed with white cement slurry over rough plaster surface (excluding cost of rough plastered surface which should be measured and paid separately) using glazed tiles of approved make and size including cost of materials, labour, complete as per specifications. Specification No.KBS 14.16, 14.17 - Colour glazed tiles 30x60 cms 6mm thick with border of size 30 x 10 cms. (P.No.108, I.No. 14.41.2 of PWD SR 2018-19)								
	Tiles for Wall		1	3.54	2.10		7.43		
			1	2.54	2.10		5.33		
						Sqm	**12.76**	**1762.56**	**22,490.00**
							Basic Rate	1632.00	
						Area Weightage @ 8%		130.56	
							Total	1762.56	
23	Providing and laying/fixing cement base, precast pre polished cement concrete, designer tiles 25mm thick conforming to IS 1237 heavy duty tiles for flooring reads of steps of steps and landin, laid on a bed of 12mm thick cement mortar 1:3 mis finished with flush pointing using white cement, including cost of material,s including cutting, griding the edge ti half/ful rounf wherever requires labour, curing complete as per specification Page No. 109 / Item No. 14.62 / PWD SR 2018-19								
	For Steps	sqm	1	3.00		0.90	2.70		
			1	3.00		0.60	1.80		
			1	3.00		0.30	0.90		
							5.40	**1330.56**	**7,185.00**
							Basic Rate	1232.00	
						Area Weightage @ 8%		98.56	
							Total	1330.56	
24	KSRB 7.7 : Providing and fixing in position in cement concrete 1:3:6 steel glazed windows and ventilators side hung/top hung fully openable as per approved drawings using Z angles of 25x33x3mm, weighing 1.419Kg/m both for outer and inner frames and central mullion section of size 25x46x3mm weighing 2.28Kg/m duly providing T section 19x19x3mm weighing 0.839 kg/m for glazing of windows not more than 34 cms. c to c including providing and fixing 4mm thick reeded glass with teakwood beading of required size, all steel section should confirm to I.S. 7452:1990, 4nos, of holdfasts of approved size section should be cut to length welded and electrically grinded subdividing frames of unit shall be tenonned and revetted into the frames electrically. All the steel surface shall be thoroughly cleaned free of rust and painted with one coat of anti-corosive paint and finishing with two coats of ready mix paint of approved colour and make including cost of materials, fixtures, labour and HOM of machinery complete as per specifications. Specification NO. KBS 7.12.1 / 7.12.2 / 7.12.3 / 7.12 Page No. 32 / Item No. 7.7/ PWD SR 2018-19								
	V	Sqm	2	0.90		0.60	1.08		
							1.08	**4209.84**	**4,547.00**
							Basic Rate	3898.0	

						Area Weightage @ 8%		311.8	
							Total	4209.8	
25	KSRB: 7.5 Providing and fixing pull and push type rolling shutters of approved make out of 18 guage, 75mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements for steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & outside locking with push & operations complete Including pulling hooks, 4nos handles wit hall fittings and accessories, painted with a coat of red lead paint (without top cover) cost of materials, labour, HOM of machinery complete as per specifications. Shutter size 3mx2.8m Specification NO. KBS 7.10 / 7.12 Page No. 31 / Item No. 7.5/ PWD SR 2018-19								
	RS (Rolling Shutter)	Sqm	1	3.00		2.50	7.50		
							7.50	**2815.56**	**21,117.00**
							Basic Rate	2607.00	
						Area Weightage @ 8%		208.56	
							Total	2815.56	
26	KSRB 7.14 : Providing, fabricating, assembling and fixing in position aluminium partitions using sections in combination of plain, single grove and double grove as per requirements for the frames of overall size 101.6mm x 44.45mm, 3.18mm.thick having section weight, plain sections 2.40kg/m single grove section 2.541kg/m. and double grovesection 2.683 kg/m and bottom 46 kg/m; aluminium louvres of size 77.6mmx27.6mm 1.7mm. thick section weight 0.483kg/m; bottom portions provided with 12mm. thick prelaminated sheet both side of approved colour lamination exterior grade; aluminium sections of mat finish or glossy finish using section, spacing of vertical member shall not exceed 0.6 m. c to c; sections are cut to the required lengths, joints mitered and corners grinded subdividing frames tennoned and rivetted to the frames, the assembled frame should be stiffened with corner angles stripped and fixed with screws, rawl plugs and teak wood gutties to R.C.C.columns or masonry on sides, R.C.C. lintels or beams at top and floor at bottom, including cutting chistling and making good with cement mortar to match the surface, providing and fixing bottom panel filled with the materials to a height of 0.9m. from floor level; and 5.5mm. thick plain glass for middle portion viz., 0.9m. to 2.13 m. and top panel with lower sections, the glass and panels fitted with glazing clips of 19mmx17.3mm. with thickness of 0.9mm. weight 0.124kg/m; aluminium sections pre-treated for removal of any rust and prevention of further rust formation, and coated with greasy materials for non-adherence of mortars or any other sticky materials; vertical members embedded in the flooring by making suitable size holes and fixing with cement mortar, with necessary opening for fixing of doors of standard size (excluding cost of door opening) All the frame should be throughly cleaned free from rust, scale or dirt including cost of materials, fixtures, labour and HOM of machinery complete as per specifications. using aluminium section powdered coated to a minimum of 60-70 microns with exterior durable pure polyester grade powder of approved quality. ((P.No.36/I.No. 7.14.2 of CSR 2018-19)								
	Alluminum glazed partation wall	Sqm	1	3.00		2.10	6.30		
							6.30	**5178.60**	**32,625.00**
							Basic Rate	4795.00	
						Area Weightage @ 8%		383.60	
							Total	5178.60	
27	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.143, I.No.19.1 of PW,								
	Footpath Near RO Plant	Cum	1	140.00	1.00	0.15	21.00		
							21.00	252.49	5302.33
	A.Basic rate	**130.00**							
	B.Loading and unloading with 20km lead= 57+2.0x1.28x20 = 108.2	**108.20**							
	C (Area Weightage 6%)	**14.29**							
	Total	**252.49**							
28	KSRRB M400-19: Construction of Median and island above road level with approved material deposited from borrowpits, spread, sloped and compacted as per Clause 400.7 complete as per specifications. MORTH Specification No.407 (P.No155 of I.No.20.20 in PW,P&IWTD SR 2018-19)								
	For Cobble Stone Footp	Cum							
			1	140	1	0.10	14.00		

	A.Basic rate	**209.00**					14.00	221.54	3101.56
	B.Area Weightage 6%	**12.54**							
	Total	**221.54**							
29	KSRB 14.6-1: Providing & laying heavy duty cobble stones 60mm thick interlock pavers,using cement & course sand for manufacture of blocks of approved size ,shape and colour with a minimum compressive strength of 281 kg per sqm over 50mm thick sand bed (Avg thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS (P.No 103 of I.No.14.6 in PW,P&IWTD SR 2018-19)								
	For Cobble Stone Footpath	Sqm							
			1	140	1.00		140.00		
	A.Basic rate	**1053.00**					140.00	1116.18	**156265.20**
	B.Area Weightage 6%	**63.18**							
	Total	**1116.18**							
30	Providing and fixing precast solid concrete kerb stones made out of CC. 1:2:4 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting, including form work, curing including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc. complete (P. No. 27 I. No 5.29.2 in PW P&IWTD SR 2018-19)								
	For Cobble Stone Footpath	No							
			2	140	1.00		622.00		
							622.00	467.46	**290760.12**
	A.Basic rate	**441.00**							
	B.Area Weightage 6%	**26.46**							
	Total	**467.46**							
31	KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (P.No.180, I.No. 24.1 of PW,P&IWTD SR 2018-19)								
	For Cobble Stone Footpath	Sqm							
	Kerbs painting		2	140		0.35	98.00		
							98.00	84.80	8310.40
	Basic rate	**80.00**							
	Area Weightage 6%	**4.80**							
	Final Rate	**84.80**							
	Providing R.O. Plant								
	Providing revsrse osmosis system to cover 2000 Liters of High TDS water per hour								
	TECHNICAL SPECIFICATIONS								
	Flow Rate:								
	Feed Water : 5000 LPH								
	Treated Water : 3000 LPH								
	Reject Water : 2000 LPH								
A	**RAW WATER PUMP**								
	Purpose:- To feed the Dual Medial filter at pressure more than 2.00 bars which is min operating pressure								
B	**SAND MEDIA FILTER**								
	Purpose:- To remove the total suspendred solids, dirt, iron and reduce silt density index which can foul								
C	**ACTIVATE CARBON FILTER**								
	Purpose:- To remove the total color, smell, odor from the water.								
	Media: Mixed bed sand media consisting of the following i) Gravel ii) Pebbles iii) carbon Average porosity								
	DOSING SYSTEM								
	Purpose : To dose anti scaling chemical to protect the scaling formation on RO Membranes								
D	**MICRON FILTER**								
	Purpose : To remove the fine particles ip to 05 microns and reduce silt density levels to acceptable level.								
E	**HIGH PRESSURE PUMP**								
	Purpose : To feed the reverse Osmosis membrane at pressure more than the osmotic pressure taking into consideration flux rate, flow and recovery								
	RO membrane housing.								
	Purpose : To pack membrane and operate at high pressure.								
	RO MEMBRANES								
	Purpose : To remove the major part of TDS into 98% by Reverse Osmosis Membranes arranged and designed to give adequate flow the Recovery.								
	RO CLEANSING SYSTEM								

F	ELECTRICAL PANEL								
	Purpose : A control panel is provided as a safety measure for the pumps & other electrical items.								
	Specifications a) Complete starters, overload relays, b) Voltmeter, Ammeter, MCB's indicating lights, c) Rocker switches for Dozers, d) incomers, Auto-Manual switches.								
	INSTRUMENTATION								
	Purpose : a) Flow meter : To measure the online flow of water flowtec b) Low pressure switch : To protect RO pump from dry running c) High pressure switch : To protect RO pump from back pressure d) Pressure Gauges : For calculate AP for each unit in RO system								
	PH DOSING SYSTEM								
32	Purpose to dose sodium Bi-carbonate for enhances product water SS till the pre-filteration & SS from HPP to thhe premeter line termination point NRV's pressure relief valves, wherever needed the system will be on common SS base frame supply & manufacture of complete Reverse Osmosis plant stainless steel tank (2kl) Raw water tank (5kl) with stainless steel pipe line required for plant erection.								
		Sqm	1				1.00	515000.00	515000.00
	ELECTRIFCATION								
33	Supplying and wiring adopting loop system in existing PVC Conduit / casing capping using 1100V grade, COPPER conductor flexible multistrand FRLS PVC insulated, 2 X1.5Sq.mm Cable confirming to the GTP, with a 6Amps flush type SP control switch shall be fixed on the existing plastic sheet / gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet. GROUP A (Page No. 05, Item No.2.1 KPWD SR 2014-15								
	b) Medium point above 3Mtr upto 6Mtr from tapping point to out let via switch	Point	2				2.00	245.00	490.00
	c) Long point above 6Mtr upto 10Mtr from tapping point to out let via switch	Point	2				2.00	363.00	726.00
34	Supplying and flush mounting teak wooden box without front plank, made of not less than 12mm thick wood, after due groove cutting, Finishing with necessary cement plastering complete (Page No. 03, Item No. 1.6) KPWD SR 2014-15								
	(1.6.5) 4"x4"x3" (101x101x76mm)	Each	12				12.00	68.00	816.00
	(1.6.1) 12"x12"x3" (300x300x76mm)	Each	6				6.00	116.00	696.00
	(1.6.3)10"x7"x3" (254x178x76mm)	Each	6				6.00	87.00	522.00
35	Supplying 4mm thick plastic sheet with necessary nitches for fixing switches, regulators etc., and fixing on existing wooden or metal box using N.F. screws. (Page No. 17, Item No. 3.9) KPWD SR 2014-15								
			Sqm	6000.00			6000.00	0.25	1,500.00
36	Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete. upto 50mm conduit in brick wall (Page No. 03, Item No.1.7.1) KPWD SR 2014-15								
			Sqm	10			10.00	21.00	210.00
37	Supplying heavy gauge PVC Conduit Pipe 19/20 mm dia 2 mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering up to the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary. (Page No. 02, Item No. 1.3.1) KPWD SR 2014-15								
			Sqm	10			10.00	56.00	560.00
38	Supplying and fixing PBBC/Bakelite straight or slant batten holder and wiring with 60w/230 volts lamps. (Page No. 20, Item No. 4.2) KPWD SR 2014-15								
		No	2				2.00	88.00	176.00
39	Supplying patti type fluorescent tube light fitting of 2' - suitable for 14 watts fluorescent tube fitting, made out of M.S. Sheet and stove enameled with HF Electronic Ballast , locking type brass contact holders mounted on double fold type sheet base fully wired for use on 230 volts AC . Supply including T5 lamp. (Page No. 20, Item No. 4.5) KPWD SR 2014-15								
		No	4				4.00	591.00	2,364.00

40	*Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand Copper with low conductor resistance single core wire in open or concealed system of wiring with specified IS-694:1990 & confirming to GTP of GROUP -A 1.5 sqmm (Page No. 06, Item No. 2.5.2) KPWD SR 2014-15*								
			Sqm	5			**5.00**	**18.60**	**93.00**
41	*Supplying and fixing cast Aluminum round or oblong type bulk head fitting with GI wire guard, glass cover with 60/100 watts 230V GLS lamp. (Page No. 20, Item No. 4.3) KPWD SR 2014-15*								
		No	4				**4.00**	**747.00**	**2,988.00**
42	*Supplying, fixing, wiring, earth electrode for grounding conduits, I.C. cutouts and other equipment's on the meter board using 40mm dia 2.90mm thick GI pipe 2.5 mtr long buried in a pit ... The pit should be filled with equal proportion of salt and charcoal 150mm all-round the pipe to complete depth. The connection from the pipe to the conduit etc., is to be established through GI wire of size as per ISI specification 7.3.3. of IS 732 using 12mm dia bolts, nuts, washers and check nuts etc., the pipe shall have 16 through holes of 122 mm dia (Page No. 55, Item No. 7.1) KPWD SR 2014-15*								
			Sqm	1			**1.00**	**2727.00**	**2,727.00**
	Sub Total Cost of KPWD SR items								**866004.34**
43	**B.Total Construction Cost**								**1394872.34**
	Cost towards 12% GST on KPWD SR Items								**103920.52**
	Sub Total								**1498792.86**
#7	**Miscellaneous and rounding off**								**1207.14**
	Total								**1500000.00**

Certificate

1. The workspot was inspected and works is found to be necessary.

2. The area comes within the Bruhat Bangalore Mahanagara Palike limits.

3. The rates adopted based on the PWD SR,Bangalore circle for year 2018-2019, KPWD Electrical SR 2014-15 & PRED SR 2012-13

Assistant Engineer

Executive Engineer

Asst. Executive Engineer

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore

TECHNICAL SANCTION
Accorded For Rs. Fifteen lakhs only
Head of A/c. P-3445
Div. Ref. No. 94/18-19 Date. 01/02/19

AE

EE(BTP) 01/02

Administrative Approval
Accorded For Rs 15.00 lakhs only
Head of A/C P3445
CER NO : 161 Dt: 08-01-2019

TA

CE (YNK)